

2-Internet of Things

- _____ allows us to control electronic components
 - RETful API**
 - RESTful API
 - HTTP
 - MQTT
- MQTT stands for _____
 - MQ Telemetry Things
 - MQ Transport Telemetry
 - MQ Transport Things
 - MQ Telemetry Transport**
- MQTT is better than HTTP for sending and receiving data.
 - True**
 - False
- MQTT is _____ protocol.
 - Machine to Machine
 - Internet of Things
 - Machine to Machine and Internet of Things**
 - Machine Things
- Which protocol is lightweight?
 - MQTT**
 - HTTP
 - CoAP
 - SPI
- PubNub publishes and subscribes _____ in order to send and receive messages.
 - Network
 - Account
 - Portal
 - Keys**
- By clicking which key the PubNub will display public, subscribe, and secret keys.
 - Pane
 - Demo Keyset**
 - Portal
 - Network
- The messageChannel class declares the _____ class attribute that defines the key string.
 - command_key**
 - command-key
 - commandkey
 - Key_command
- _____ method saves the received arguments in three attributes.
 - _Init
 - Init_
 - _Init_**
 - _init_
- _____ and _____ saves the publish and subscribe keys that we have generated with the PubNub Admin portal.
 - public_key and subscribe_key**
 - Public-key and subscribe-key
 - publickey and subscribekey
 - Key_public and key_subscribe
- _____ specifies the function that will be called when there is a new message received from the channel.

- a) Reconnect
 - b) Error
 - c) Connect
 - d) Callback**
12. _____ specifies the function that will be called on an error event.
- a) Callback
 - b) Error**
 - c) Connect
 - d) Reconnect
13. _____ Specifies the function that will be called when a successful connection with the PubNub cloud.
- a) Callback
 - b) Error
 - c) Connect**
 - d) Reconnect
14. _____ specifies the function that will be called when a successful re-connection is completed.
- a) Callback
 - b) Error
 - c) Connect
 - d) Reconnect**
15. _____ specifies the function that will be called when the client disconnects.
- a) Callback
 - b) Error
 - c) Connect
 - d) Disconnect**
16. which is not an element of IOT
- a.people
 - b.process
 - c.security**
 - d.things
17. what risks and challenges should be considered in the internet of everything?
- a. privacy and security
 - b.energy consumption
 - c.network congestion
 - d.all of the above**
18. what is IIOT?
- a. Information Internet of things
 - b. Industrial Internet of things**
 - c. innovative Internet of things
 - d. none of above.
- 19.who invented the term internet of things.**
- a. Bill gates**
 - b. kevin ashton**
 - c. steve jobs**
 - d.McDonald**
20. the huge number of devices connected to the internet of things have to communicate automatically, not via humans, what is this called?
- a.Bot to bot(B2B)
 - b. Machine to machine (M2M)**
 - c. Intercloud
 - d. skynet
21. what is the size of the IPV6 addressed?
- a.32 bit
 - b. 64 bit

- c. **128 bit**
d. 256 bit
22. what is the name of first recognized IOT device?
a. smart watch
b. **ATM**
c. Radio
d. video games
23. _____ is being used by internet of things.
a. **radio identification technology**
b. satellite
d. broadband
24. _____ best describe the MQTT protocol.
a. machine to machine (M2M)
b. publish/subscribe
c. **request/response**
d. mesh networking
25. the internet of things will run on many communications standards. Which of this is not standard body or protocol.
a. zigbee
b. Allsean
c. **Tyrell**
d. Z-Wave
26. when was the term IoT first coined.
a. 1998
b. **1999**
c. 2000
d. 2001
27. when did IoT devices surpass people in number
a. 2005
b. 2006
c. 2007
d. **2008**
28. How many key features must an IoT device have, according to the Internet of Things Global standards.
a. 5
b. 6
c. **7**
d. 8
29. Which is not one of the features of Internet of Things devices.
a. remotely controllable
b. programmable
c. can turn themselves off if necessary
d. **all are features.**
30. How many devices are estimated to be connected to internet of things in by 2020.
a. approx...2 million
b. approx...20 million
c. approx...75 million
d. **approx...100 million**
31. This alliance is composed of 20 world technology leaders working to develop standards and protocols for device communication.
a. AllAboard
b. AllConnected
c. Alldevyce
d. **AllJoyn**

32. which is not one of the concern of the Internet of things?
- a. Data storage standards
 - b. Efficiency**
 - c. Privacy concern
 - d. Cyber security
- 33 IANA stands for:
- a. Internal Assessment Numerical Access
 - b. Internet Association Numbers Authority
 - c. International Aid for [Network Automation](#)
 - d. Internet Assigned Numbers Authority**
- 34 Standard port number for secure MQTT is:
- a. 1883
 - b. 8000
 - c. 8883**
 - d. 8888
35. • Bluetooth 5.0 promises:
- a. 4x Speed, 2x Range, 2x Data
 - b. 6x Speed, 3x Range, 3x Data
 - c. 2x Speed, 4x Range, 8x Data**
 - d. 3x Speed, 4x Range, 8x Data
36. Terms SSL and TLS stand for:
- a. Secure Socket Layers and Transport Layer Session
 - b. Secure Socket Layers and Transport Layer Security**
 - c. Secure Socket Layout and Transport Level Session
 - d. Session Socket Layers and Transport Layer Session
- 37 Which one out of these is not a data link layer technology:
- a. Bluetooth
 - b. UART
 - c. WiFi
 - d. HTTP**
- 38 Which transport layer protocols is used by DHCP?
- a. RSVP
 - b. TCP
 - c. DCCP
 - d. UDP**
39. Which layer is called a port layer in OSI model:
- a. Session**
 - b. Application
 - c. Presentation
 - d. Transport
- 40 What is a firewall in computer networks:
- a. A system designed to prevent unauthorized access**
 - b. A web browser
 - c. The physical boundary of network
 - d. The Network Operating System
41. Router operate at layer of OSI reference model?
- a. Layer 2 (Data Link)

b. Layer 3 (Network)

c. Layer 1 (Physical)

d. Layer 4 (Transport)

42. Each IP packet must contain:

a. Only Destination IP Address

b. Only Source IP Address

c. None of Above

d. Source and destination IP Addresses

43• Which one of this is not a networking device:

a. Router

b. Switch

c. Bridge

d. Traffic Analyzer

44• What is the standard length of MAC address:

a. 16 bits

b. 32 bits

c. 48 bits

d. 64 bits

45. What is the use of Ping command:

a. To know network speed

b. None of the above

c. To test a host on the network is reachable

d. To test storage device

46. What is Secure Shell (SSH):

a. A router

b. A firewall

c. A network protocol

d. Python Shell

47 What does VNC stand for:

a. Various Network computers

b. Virtual Network Computing

c. None of the above

d. Virtual Network Communication

48• What is the purpose of bin directory in Linux environment:

a. Contains essential device files

b. Contains essential binary commands

c. Containing configuration files

d. Contains user home directories

49• What is Inter Integrated Communication(I2C):

a. An application layer protocol

b. A networking communication protocol for multi-master support

c. An OS for distributed network communication

d. A cellular communication protocol

50. How many wires does SPI protocol use:

a. 2

b. 3

c. 1

d. 4

51• What does LTE stand for:

- a. Long Term Errors
- b. Long Term Evolution**
- c. Lengthy Terminal Estimation
- d. Long Term Estimates

52• Which one out of these is not LPWAN technologies:

- a. SigFox
- b. WiFi**
- c. NB-IoT
- d. LoRa

53• Frequency band used by 802.11 ah standard is:

- a. 60 GHz
- b. 2.4 GHz
- c. Sub 1 GHz**
- d. 5 GHz

54. Fuzzy Logic is a form of:

- a. Hexa state logic
- b. Two-valued logic
- c. Binary set logic
- d. Many valued logic**

55• _____ involves predicting a response with meaningful magnitude, such as quantity sold, stock price, or return on investment.

- a. Summarization
- b. Clustering
- c. All of the mentioned
- d. Regression**

56• Which of the following language is preferred for IoT analytics ?

- a. Python**
- b. S
- c. R
- d. All of the mentioned

57• Which one is simplest form of analytics

- a. Predictive
- b. Descriptive**
- c. All of the mentioned
- d. Prescriptive

58• The method by which companies analyze customer data or other types of information in an effort to identify patterns and discover relationships between different data elements is often referred to as:

- a. Customer data management
- b. Data mining**
- c. Data digging
- d. None of the above

59• A collection of lines that connects several devices is called

- a. Bus**
- b. Cable
- c. Power line
- d. Transmission Line

60• A start bit in UART communication is always:

- a. 1
- b. Neither of these

c. 0

- 61• Machine learning is
- a. The selective acquisition of knowledge through the use of manual programs
 - b. The autonomous acquisition of knowledge through the use of manual programs
 - c. The selective acquisition of knowledge through the use of computer programs
 - d. The autonomous acquisition of knowledge through the use of computer programs**
- 62 HTTP resources are located by
- a. unique resource locator
 - b. unique resource identifier
 - c. none of the mentioned
 - d. uniform resource identifier**
- 63• What is the TCP name for a transport service access point
- a. none of the mentioned
 - b. node
 - c. pipe
 - d. port**
- 64• A Denial of Service attack is:
- a. Connection flooding
 - b. Bandwidth flooding
 - c. All of the mentioned**
 - d. Vulnerability attack
- 65• A packet sniffer is
- a. Active receiver
 - b. Both of the mentioned
 - c. Passive receiver**
 - d. None of the mentioned
- 65• IPSec provides security at:
- a. Physical Layer
 - b. Network Layer**
 - c. Transport Layer
 - d. Session Layer
- 66• WPA is a security mechanism in
- a. WiFi**
 - b. Cloud
 - c. Bluetooth
 - d. Ethernet
- 67• Network topology with a central hub or switch is
- a. Mesh
 - b. Token ring
 - c. Star**
 - d. Token bus
- 68• Internet domain name and hostname are translated into IP address by
- a. Domain name system**
 - b. Domain name database
 - c. Router
 - d. Domain information system
- 69• Which protocol allows user at one site to establish connection to another site and pass keystroke from local to remote host:
- a. Telnet**
 - b. FTP
 - c. IP

d. HTTP

70• How many times setup function runs in Arduino IDE:

a. None of the above

b. 10

c. 2

d. 1

71• How many times loop function runs in Arduino IDE:

a. 4

b. forever

c. 1

d. 5

72• What error occurs when you execute?

x = abc

a. NameError

b. SyntaxError

c. ValueError

d. TypeError

73• PWM stands for:

a. None of the above

b. Pulse Width Mode

c. Pulse With Modulation

d. Pulse Width Modulation

74• Raspbian is:

a. Assembler

b. Language

c. Compiler

d. OS

75• CGI stands for:

a. Common Gateway Interest

b. Common Gateway Interrupt

c. Common Gate Interference

d. Common Gateway Interface

76• MQTT is:

a. Based on client-server architecture

b. Based on publish-subscribe architecture

c. Based on both of the above

d. Based on none of the above

77• What is the access point (AP) in wireless LAN?

a. none of the mentioned

b. wireless devices itself

c. both (a) and (b)

d. device that allows wireless devices to connect to a wired network

78• In wireless ad-hoc network

a. none of the mentioned

b. access point is not required

c. nodes are not required

d. access point is must

79• Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

a. ALOHA

b. CSMA/CA

c. CDMA

- d. none of the mentioned
- 80• Which is the correct operator for power(x^y)?
a. x^y
b. $x^{^y}$
c. x^{y}**
d. None of the mentioned
- 81• What is WPA?
a. wi-fi protected access
b. wired process access
c. wired protected access
d. wi-fi process access
- 82• The answer of $2+3L$ is:
a. 5.0
b. 5L
c. 5
d. Error
- 83• An interconnected collection of piconet is called
a. micronet
b. scatternet
c. mininet
d. none of the mentioned
- 84• In a piconet, there can be up to _____ parked nodes in the net.
a. 511
b. 63
c. 255
d. 127
- 85• Secure shell (SSH) network protocol is used for
a. remote command-line login
b. remote command execution
c. all of the mentioned
d. secure data communication
- 86• The network layer concerns with
a. bits
b. frames
c. none of the mentioned
d. packets
- 87• Ethernet frame consists of
a. none of the mentioned
b. IP address
c. both (a) and (b)
d. MAC address
- 88• What is internet?
a. interconnection of local area networks
b. a vast collection of different networks
c. a single network
d. none of the mentioned
- 89• DNS database contains
a. hostname aliases
b. hostname-to-address records
c. all of the mentioned
d. name server records

90 IoT stands for

- a. Internet of Technology
- b. Intranet of Things
- c. Internet of Things**
- d. Information of Things

91. Which is not the features of IoT

- a. Connectivity
- b. Self-configuring
- e. Endpoint management**
- c. Artificial intelligence

92. Which is not an IoT communication Model

- a. Request –response
- b. Publish subscribe
- f. Push producer**
- c. Exclusive pair

93. WSN stands for

- a. Wide sensor network
- g. Wireless sensor network**
- b. Wired sensor network
- c. None of these

94. Devices that transforms electrical signals into physical movements

- a. Sensor
- h. Actuators**
- b. Switches
- c. Display

95. **An embedded system** is a microcontroller or microprocessor based system which is designed to perform a specific task.

96. An **embedded system** is a combination of computer hardware and software, either fixed in capability or programmable, designed for a specific function or functions within a larger system.

97. An embedded device contains few or all the peripherals inside the module which is called as **SOC(System on chip)**.

98. **Wireless communication media**- Bluetooth, zigbee, WI-FI, GPRS (General package radio service), edge

99. **Wired communication media**- RS232, USB, TCP/IP, PC2, FIREWIRE PORT, SPI, CAN

100. PIC controllers are the smallest microcontrollers which can be programmed to perform a large range of tasks.

101. AVR was developed in the year 1996 by Atmel Corporation.

102. AVR is also known as Advanced virtual RISC.

103. ARM stands for Advanced RISC machine.

104. ARM is 32 bit microcontroller and introduced by Acron Computers organization in 1987.

105. ASIC stands for application specific integrated circuit.

106. The **Internet of things** is a computing concept that describes the idea of everyday physical objects being connected to the internet and being able to identify themselves to other devices

107. The “Things” in IOT usually refers to IOT devices which have unique identifies and can perform remote sensing, actuating and monitoring capabilities.

108. _____ protocols determine how the data is physically sent over the network's physical layer or medium (e.g. copper wire, coaxial cable or a radio wire).
- Network layer
 - Application layer
 - Transport layer
 - d. Link layer**
109. _____ determines how the packets are coded and signaled by the hardware device over the medium to which the host is attached .
- Network layer
 - Application layer
 - Transport layer
 - d. Link layer**
110. _____ are responsible for sending of IP datagrams from the source network to the destination network.
- a. Network layer**
 - Application layer
 - Transport layer
 - Link layer
111. _____ performs the host addressing and packet routing.
- a. Network layer**
 - Application layer
 - Transport layer
 - Link layer
112. _____ provides end-to-end message transfer capability independent of the underlying network.
- Network layer
 - Application layer
 - c. Transport layer**
 - Link layer
113. _____ provides functions such as error control, segmentation, flow control and congestion control.
- Network layer
 - Application layer
 - c. Transport layer**
 - Link layer
114. _____ protocols define how the applications interface with the lower layer protocols to send data over the network.
- Network layer
 - b. Application layer**
 - Transport layer
 - Link layer
115. HTTP stands for ____

- a. Hypertext transport protocol
 - b. Hypertext transmission protocol
 - c. Hypertext transfer protocol**
116. COAP stands for ____
Constrained application protocol.
117. WebSocket(**full duplex communication protocols**)
118. MQTT(**Message queue telemetry transport**) : light weight messaging protocol based on the publish subscribe model.
119. XMPP(**Extensible messaging and presence protocol**)
120. Dds(**data distribution service**)
121. AMQP(**ADVANCED MESSAGE QUEING PROTOCOL**)
122. **Link layer protocol**- 802.3-ethernet , 802.16-WiMax, 802.11-WIFI
123. **Network layer protocol** – IPV4,IPV6,6LOWPAN
124. **Transport layer protocol** – TCP,UDP
125. **Application Layer protocols** are- HTTP, COAP, WebSocket, MQTT, XMPP, Dds, AMQP.
126. **Zigbee is one the most popular wireless technologies used by WSNs.**
127. **Cloud computing** is a transformative computing paradigm that involves delivering applications and services over the internet.
128. **Big data analytics** is the process of collecting, organizing and analyzing large sets of data.
129. **Big data analytics** can help organization to better understand the information contained within the data and will also help identify the data that is most important to the business and future business decisions.
130. **Big data analytics** involved several steps starting from data cleansing, data munging(or wrangling) , data processing and visualisation.
- i. IOT LEVEL1- Home automation.
131. IOT LEVEL2- smart Irrigation
132. IOT LEVEL3- tracking package handling
133. IOT LEVEL4- Noise Monitoring
134. IOT LEVEL5-Forest Fire Detection
135. IOT LEVEL6- weather monitoring system.
136. IOT-DEVICES- Arduino uno 2. Raspberry pi 3. Intel Galileo 4. Nodeµ
137. **Temperature sensor** :To measure the amount of heat energy generated from an object or surrounding.
138. **Humidity sensors** : To measure amount of water vapour in air.
139. **image sensors** : Found in digital camera, medical imaging systems, night vision equipment,thermal imaging devices, radars , sonars media house and biometric systems.
140. **accelerometer sensors**: These sensors are used in smartphones,vehicles, aircrafts and other applications to detect orientation of object, shake, tap, tilt, motion, vibration.Different.
141. **IR sensors**:measure heat emitted by the objects.
142. **ACTUATORS** are the devices that transforms electrical signals into physical movements.

143. **REST** stands for Representational state transfer.
144. **Request-Response** is a communication model in which the client sends request to the server and the server responds to the request.
145. **Publish subscribe** is a communication model that involves publisher, brokers, and consumers.
146. **Push-pull** is a communication model in which the data producers push the data to queues and the consumers pull the data from the queues.
147. Exclusive pair is a _____, fully duplex communication model that uses a persistent connection between the client and server.
- a. **bi-directional**
 - b. unidirectional
148. Exclusive pair is _____ communication model.
- a. **stateful**
 - b. stateless